

Application No. 10/668,876
Office action dated January 30, 2007
Response dated April 19, 2007

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AMENDMENTS TO THE CLAIMS

Please amend the claims as follows. This listing of claims replaces all prior versions and listings of claims in the application.

1 (withdrawn). A method for forming an arbitrarily-shaped electrode on a medical device, comprising:

- forming a device body from a nonconductive material;
- determining a shape for the electrode;
- forming the electrode from a conductive, biocompatible material in the determined shape;
- attaching an electrically conductive element to the electrode;
- affixing the electrically conductive element and the electrode to a section of the device;
- overmolding the electrode with an overmold material; and removing a portion of the overmold material above the electrode sufficient to expose the electrode.

2 (withdrawn). The method of claim 1, wherein the conductive, biocompatible material is chosen from the group consisting of platinum and gold.

3 (withdrawn). The method of claim 1, wherein the step of removing a portion of the overmold material comprising abrading the overmold material sufficiently to expose the electrode.

4 (withdrawn). The method of claim 1, wherein the electrically conductive element is a wire.

5 (withdrawn). The method of claim 4, wherein the wire is run along a tube.

6 (withdrawn). The method of claim 5 further comprising:

- placing a tube within a jacket; and wherein

Application No. 10/668,876
Office action dated January 30, 2007
Response dated April 19, 2007

the step of affixing the wire and electrode to a section of the device comprises attaching the wire and electrode to the tube prior to placing the tube within the jacket.

7 (withdrawn). The method of claim 4, wherein the wire is co-extruded with the tube.

8 (withdrawn). The method of claim 7, wherein the step of attaching the electrically conductive element to the electrode comprises forming a via through the device body, the via at least partially overlaying the wire and at least partially underlying the electrode.

9 (withdrawn). The method of claim 1, wherein the electrically conductive element is a trace.

10 (withdrawn). The method of claim 9, wherein the trace is electro-deposited on the exterior of the device body.

11 (withdrawn). The method of claim 10, wherein:

the device body is a tube; and

the method further comprises the step of concealing the trace by inserting the tube into an electrically nonconductive jacket.

12 (withdrawn). The method of claim 11, further comprising the steps of:

removing nonconductive material from a portion of the tube in order to expose a portion of the trace;

removing nonconductive material from a portion of the jacket in order to further expose a portion of the trace; and

electrically connecting the arbitrarily-shaped electrode to the exposed portion of the trace.

Application No. 10/668,876
Office action dated January 30, 2007
Response dated April 19, 2007

13 (withdrawn). The method of claim 1, wherein the step of overmolding the electrode with an overmold material comprises overmolding the electrode with an electrically nonconductive material in order to form a tip.

14 (withdrawn). The method of claim 14, wherein the step of forming the electrode from a conductive, biocompatible material in the determined shape occurs prior to the step of affixing the electrically conductive element and the electrode to a section of the device.

15 (currently amended). A catheter for using use in a medical procedure, comprising:
a catheter body;
a catheter tip operably connected to the catheter body;
at least one arbitrarily-shaped electrode overmolded by a portion of the catheter, at least a portion of the at least one arbitrarily-shaped electrode being exposed through the overmold of the catheter and a portion of the overmold of the catheter remaining adjacent the exposed portion of the at least one arbitrarily-shaped electrode; and
at least ~~or~~ one energy delivery element operably connected to the at least one arbitrarily-shaped electrode.

16 (previously presented). The catheter of claim 15, wherein:
the arbitrarily-shaped electrode is formed by electro-depositing a conductive, biocompatible material within a depression formed on the catheter tip; and
the catheter tip is further overmolded over the electrode.

17 (previously presented). The catheter of claim 15, wherein:
the catheter body comprises a lumen tube and a jacket, the lumen tube nested within the jacket;
the energy delivery element is formed on an exterior surface of a lumen tube;
and
the arbitrarily-shaped electrode extends through the jacket to the energy delivery element.

Application No. 10/668,876
Office action dated January 30, 2007
Response dated April 19, 2007

18 (canceled).

19 (previously presented). The catheter of claim 15 wherein the arbitrarily-shaped electrode is comprised of a biocompatible, conductive material.

20 (previously presented). The catheter of claim 19 wherein the biocompatible conductive material is selected from the group consisting of platinum and gold.

21 (previously presented). The catheter of claim 15 wherein the at least one energy delivery element is a wire.

22 (previously presented). The catheter of claim 21 further comprising a tube along which the wire is run.

23 (previously presented). The catheter of claim 22 further comprising a jacket surrounding the tube.

24 (previously presented). The catheter of claim 22 wherein the tube and the wire are co-extruded.

25 (previously presented). The catheter of claim 15 wherein the at least one energy delivery element is operably connected to the at least one arbitrarily-shaped electrode by a via.

26 (previously presented). The catheter of claim 25 wherein the via partially overlays at least a portion of the wire and underlies at least a portion of the electrode.

27 (previously presented). The catheter of claim 15 wherein the at least one energy delivery element is a trace.

Application No. 10/668,876
Office action dated January 30, 2007
Response dated April 19, 2007

28 (previously presented). The catheter of claim 27 wherein the trace is electro-deposited on an exterior portion of the catheter body.

29 (previously presented). The catheter of claim 27 further comprising a jacket surrounding at least a portion of the trace.

30 (previously presented). The catheter of claim 29 wherein at least a portion of the trace is exposed from the jacket and the exterior portion of the catheter body, and the exposed portion of the trace is electrically connected to the arbitrarily-shaped electrode.

31 (new). The catheter of claim 15 wherein the at least one arbitrarily-shaped electrode comprises a plurality of arbitrarily-shaped electrodes insulated from one another by the overmold of the catheter.

32 (new). The catheter of claim 15 wherein the portion of the overmold of the catheter remaining adjacent the exposed portion of the at least one arbitrarily-shaped electrode provides a generally smooth finish to the catheter.